

CLAIMS:

1. A navigation device comprising:  
a memory for storing cartographic information, including altitude information;  
an input for receiving indication from a user of a first location and a second location;  
a processor for creating an elevation profile of changes in elevation between the first location and the second location based upon the cartographic information without requiring the user to move between the first and second locations; and  
a display for displaying the elevation profile.
2. The navigation device as set forth in claim 1, further including a GPS receiver for determining a current location of the navigation device, wherein the current location of the navigation device is used as the first location.
3. The navigation device as set forth in claim 1, further including an altimeter for determining a current altitude of the navigation device.
4. The navigation device as set forth in claim 1, further including a three-axis magnetic sensor for providing compass information to the processor.
5. The navigation device as set forth in claim 4, further including a two-axis tilt sensor for providing additional compass information to the processor.
6. The navigation device as set forth in claim 5, wherein the processor calculates a heading of the device based upon the compass information provided by the three-axis magnetic sensor and the additional compass information provided by the two-axis tilt sensor.

7. A method of providing navigation information, the method comprising the steps of:

- (a) storing cartographic information, including altitude information;
- (b) receiving an input from a user identifying a first location and a second location;
- (c) creating an elevation profile of changes in elevation between the first location and the second location based upon the cartographic information without requiring the user to move from the first location to the second location; and
- (d) displaying the elevation profile.

8. The method as set forth in claim 7, wherein step (b) further includes determining a current location of the navigation device, and using the current location of the navigation device as the first location.

9. The method as set forth in claim 7, wherein step (b) further includes the step of determining a current altitude of the navigation device.

10. A navigation device comprising:  
an input for receiving indication from a user of a first location and a second location;  
a three-axis magnetic sensor for measuring a strength of earth magnetic field in three directions;  
a two-axis tilt sensor for measuring an orientation of the navigation device in pitch and roll; and  
a processor for creating an elevation profile of changes in elevation between the first location and the second location and for calculating a heading of the navigation device based on the strength of each magnetic field measured by the three-axis magnetic sensor and the two-axis tilt sensor.

11. The navigation device as set forth in claim 10, further including a memory for storing cartographic information including altitude information.

12. The navigation device as set forth in claim 10, further including a display for displaying the elevation profile and the heading.

13. The navigation device as set forth in claim 10, further including a GPS receiver for determining a current location of the navigation device, wherein the current location of the navigation device is used as the first location.

14. The navigation device as set forth in claim 10, further including an altimeter for determining a current altitude of the navigation device.